



## NUCLEAR REGULATORY COMMISSION

[NRC-2021-0162]

### Safety Review of Light-Water Power Reactor Construction Permit Applications

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Interim staff guidance; issuance.

**SUMMARY:** The U.S. Nuclear Regulatory Commission (NRC) is issuing Interim Staff Guidance (ISG) “Safety Review of Light-Water Power Reactor Construction Permit Applications” to clarify existing guidance and to assist the NRC staff in determining whether an application to construct a light-water power reactor (LWR) facility meets the minimum requirements to issue a construction permit (CP). The NRC anticipates the submission of power reactor CP applications in the next few years based on preapplication engagement initiated by several prospective applicants. This guidance is applicable to all applicants for a CP for a light-water power reactor but not to non-LWR applicants or those following the Advanced Reactor Content of Application Project (ARCAP) guidance to the extent the guidance is issued as final and is relevant to the application from a technical and regulatory perspective.

**DATES:** This guidance is effective on **[INSERT DATE 30 DAYS AFTER PUBLICATION IN THE *FEDERAL REGISTER*]**.

**ADDRESSES:** Please refer to Docket ID **NRC-2021-0162** when contacting the NRC about the availability of information regarding this document. You may obtain publicly available information related to this document using any of the following methods:

- **Federal Rulemaking Website:** Go to <https://www.regulations.gov> and search for Docket ID **NRC-2021-0162**. Address questions about Docket IDs in Regulations.gov to Stacy Schumann; telephone: 301-415-0624; email: [Stacy.Schumann@nrc.gov](mailto:Stacy.Schumann@nrc.gov). For technical questions, contact the individual listed in the “For Further Information Contact” section of this document.

- **NRC's Agencywide Documents Access and Management System**

**(ADAMS):** You may obtain publicly available documents online in the ADAMS Public Documents collection at <https://www.nrc.gov/reading-rm/adams.html>. To begin the search, select "Begin Web-based ADAMS Search." For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1-800-397-4209, 301-415-4737, or by email to [PDR.Resource@nrc.gov](mailto:PDR.Resource@nrc.gov). The final ISG for the "Safety Review of Light-Water Power Reactor Construction Permit Applications" is available in ADAMS under Package Accession No. ML22189A097.

- **NRC's PDR:** You may examine and purchase copies of public documents, by appointment, at the NRC's Public Document Room (PDR), Room P1 B35, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852. To make an appointment to visit the PDR, please send an email to [PDR.Resource@nrc.gov](mailto:PDR.Resource@nrc.gov) or call 1-800-397-4209 or 301-415-4737, between 8:00 a.m. and 4:00 p.m. Eastern Time (ET), Monday through Friday, except Federal holidays.

**FOR FURTHER INFORMATION CONTACT:** Carolyn Lauron, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, telephone: 301-415-2736, email: [Carolyn.Lauron@nrc.gov](mailto:Carolyn.Lauron@nrc.gov).

**SUPPLEMENTARY INFORMATION:**

**I. Background**

On December 14, 2021 (86 FR 71101) and May 6, 2022, (87 FR 27195), the staff requested public comments on the draft ISG, DNRL-ISG-2022-XX, "Safety Review of Light-Water Power-Reactor Construction Permit Applications." The NRC issued the draft ISG in anticipation of the submission of power-reactor CP applications within the next few years based on preapplication engagement initiated by several prospective applicants. The review of these applications falls within the two-step licensing process under part 50 of title 10 of the *Code of Federal Regulations* (10 CFR), "Domestic Licensing of Production and Utilization Facilities," and involves the issuance of a CP before an operating license (OL).

The NRC last issued a power reactor CP in the 1970s. Most recently, the NRC issued combined construction and operating licenses (combined licenses (COLs)) for power reactors through the one step licensing process under 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants," using the guidance in NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition" (<https://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr0800/cover/index.html>); and Regulatory Guide (RG) 1.206, "Combined License Applications for Nuclear Power Plants (LWR Edition)," issued June 2007 (ADAMS Package Accession No. ML070720184). The NRC has periodically updated some of the standard review plan (SRP) guidance and issued Revision 1 to RG 1.206, "Applications for Nuclear Power Plants," in October 2018 (ADAMS Package Accession No. ML18131A181).

The licensing process under 10 CFR Part 50 allows an applicant to begin construction with preliminary design information instead of the final design required for a COL under 10 CFR Part 52. Although the two-step licensing process provides flexibility and allows a more limited safety review before construction, the design has less finality before the applicant commits to construction of the facility. The final safety analysis report (FSAR) submitted with the OL application should describe in detail the final design of the facility as constructed; identify the changes from the criteria, design, and bases in the CP preliminary safety analysis report (PSAR); and discuss the bases for, and safety significance of, the changes from the PSAR. Before issuing an OL, the NRC staff will review the applicant's final design in the FSAR to determine whether all the Commission's safety requirements have been met.

The SRP contains the NRC staff review guidance for light-water power reactor applications submitted under 10 CFR Part 50 or 10 CFR Part 52. In addition to the CP review guidance in the SRP, RG 1.70, "Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants: LWR Edition," Revision 3, issued November 1978 (ADAMS Package Accession No. ML011340122), offers some insights on the level of

detail that is required for the PSAR in support of the CP application, but these insights may be limited to the degree that the guidance does not account for subsequent requirements, NRC technical positions, or advances in technical knowledge. Regulatory Guide 1.206 provides guidance for 10 CFR Part 52 applications, including for early site permits and COLs, and includes insights on the level of detail needed for final design information if the CP applicant chooses to provide such information. The final ISG discusses the use of these guidance documents and supplements the guidance in the SRP.

The NRC recently issued CPs for two nonpower production and utilization facilities—SHINE Medical Technologies, Inc., and Northwest Medical Isotopes, LLC. Some of the lessons learned from these reviews are applicable to the review of power-reactor CP applications, as discussed in the final ISG. The final ISG also discusses other issues pertinent to the safety review of CP applications for light-water power reactors, including the benefits accruing from preapplication engagement, the relationship between the CP and OL reviews, the NRC’s approach for reviewing applications incorporating prior NRC approvals, the potential effect of ongoing regulatory activities on CP reviews, and licensing requirements for source, byproduct, and special nuclear material.

The comments received by the NRC on the draft ISG are identified, summarized, and considered in Appendix C, “Analysis of Public Comments on Draft Interim Staff Guidance DNRL-ISG-2022-XX, Safety Review of Light-Water Power-Reactor Construction Permit Applications” (ADAMS Accession No. ML22189A100).

## **II. Backfitting, Forward Fitting, and Issue Finality**

This ISG provides guidance for the NRC staff review of light-water power reactor construction permit applications. Issuance of this final ISG would not constitute backfitting as defined in 10 CFR 50.109 (the Backfit Rule) and as described in NRC Management Directive 8.4, “Management of Backfitting, Forward Fitting, Issue Finality, and Information Requests”; would not affect the issue finality of an approval under

10 CFR Part 52; and would not constitute forward fitting as that term is defined and described in Management Directive 8.4. The staff's position is based upon the following considerations:

The final ISG positions would not constitute backfitting or forward fitting or affect issue finality, inasmuch as the ISG would be internal guidance to NRC staff. The ISG provides interim guidance to the staff on how to review an application for NRC regulatory approval in the form of licensing. Changes in internal staff guidance, without further NRC action, are not matters that meet the definition of backfitting or forward fitting or affect the issue finality of a Part 52 approval.

Backfitting and issue finality—with certain exceptions discussed in this section—do not apply to current or future CP applicants. CP applicants and potential CP applicants are not, with certain exceptions, the subject of either the Backfit Rule or any issue finality provisions under 10 CFR Part 52. This is because neither the Backfit Rule nor the issue finality provisions of 10 CFR Part 52 were intended to apply to every NRC action that substantially changes the expectations of current and future applicants. The exceptions to the general principle, as applicable to guidance for CP applications, are whenever a 10 CFR Part 50 CP applicant references a license (e.g., an early site permit) or an NRC regulatory approval (e.g., a design certification rule) (or both) for which specified issue finality provisions apply. The NRC staff does not currently intend to impose the positions represented in this ISG in a manner that constitutes backfitting or is inconsistent with any issue finality provision of 10 CFR Part 52. If in the future the NRC staff seeks to impose positions stated in this ISG in a manner that would constitute backfitting or be inconsistent with these issue finality provisions, the NRC staff must make the requisite showing as set forth in the Backfit Rule or address the regulatory criteria set forth in the applicable issue finality provision, as applicable, that would allow the staff to impose the position.

Forward fitting—The Commission's forward fitting policy generally does not apply when an applicant files an initial licensing action for a new facility. Nevertheless, the

staff does not, at this time, intend to impose the positions represented in the final ISG in a manner that would constitute forward fitting.

### **III. Congressional Review Act**

This ISG is a rule as defined in the Congressional Review Act (5 U.S.C. 801-808). However, the Office of Management and Budget has not found it to be a major rule as defined in the Congressional Review Act.

Dated: November 7, 2022.

For the Nuclear Regulatory Commission.

Bernadine I. Thomson, Deputy Director,  
Division of New and Renewed Licenses,  
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